Measuring State Failure:
Development of a New State Capacity Index

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ABSTRACT

In the wake of 9/11, the phenomenon of state failure has entered into the security calculus of many Western governments. This necessitates the clear definition and objective measurement of state failure. All existing indices of state capacity or fragility, however, suffer from substantial shortcomings that undermine their validity and limit their utility. The present study discusses these shortcomings in detail and sets out to develop a new State Capacity Index that provides researchers, policy makers and practitioners with a transparent and easy-to-use tool that allows for the determination of a state's degree of capacity and its classification as strong, weak or failed. The statistical model underpinning the State Capacity Index is predicated on two assumptions: first, state failure is a condition at the lower end of a continuum of state capacity; second, state capacity has essentially five dimensions: the state's capacity to claim the monopoly of the legitimate use of force; to generate sufficient revenue to finance its operations; to effectively administer its operations; to regulate civil society through the provision of public goods; and to command legitimacy. Confirmatory factor analysis is used to test the theoretically deduced dimensionality of the latent concept state capacity. Multiple discriminant function analysis is used to develop the general assessment and classification model that underpins the State Capacity Index. 172 states are ranked and classified using the State Capacity Index. The convergent validity of the State Capacity Index is demonstrated.

Keywords: state failure; state capacity; confirmatory factor analysis; discriminant analysis

Introduction

Previously regarded as "low politics" (Schneckener, 2004), the phenomenon of state failure has been recognized in the wake of 9/11 as an issue of "high politics" as reflected in the National Security Strategy of the United States, which proclaims that "America is now threatened less by conquering states than [...] by failing ones" (2002, p.1).

There can be no doubt that state failure has very real consequences for the people affected by it, directly or indirectly, but framing incidents of state failure *a priori* "as a direct threat to Western security casts them in a specific light which may have implications for the sense of priority and the type of policy solutions they inspire" (Andersen, 2008, p.11). Scenarios of "neo-trusteeship" (Fearon & Laitin, 2004) and "shared sovereignty" (Krasner, 2005) highlight the possibility of abuse of the label "failed state," especially since the United States have "strategically deployed the terms 'failed state' or 'fragile state' to justify intervention in areas previously deemed sovereign" (Call, 2010, p.2; see also Boas & Jennings, 2007).

To prevent abuse of the label "failed state," it is necessary to clearly define and objectively measure state failure. As of 2008, there are four indices measuring the relative strength or weakness of states: the *Failed States Index*, the *State Failure Index*, the *Index of State Weakness* and the *Fragility Index*. These indices have been praised as valuable tools for policy makers (Menkhaus, 2010, p.88). Yet, their overly complex and opaque methodologies have been severely criticized (Bethke, 2009, p.30; Marshall, 2008, p.16).

The present study seeks to remedy this problem by developing a new State Capacity Index, which will provide researchers, policy makers and practitioners with a transparent and easy-to-use tool that allows for both the determination of a state's degree of capacity and its classification as strong, weak or failed. Furthermore, as Menkhaus (2010) notes, "most monitoring projects err on the side of comprehensiveness of indicators" (p.88), which is why the present study aims to find a *parsimonious* set of theoretically valid and statistically significant indicators of state capacity.

The study is structured as follows: First, the modern state, state capacity and state failure are conceptualized. Second, the shortcomings of existing indices of state capacity are discussed. Third, a confirmatory factor analysis is performed to test the theoretically deduced dimensionality of the latent concept state capacity. Fourth, the statistical model underpinning the new State Capacity Index is developed by performing a multiple discriminant analysis. The study concludes with a brief discussion of findings and limitations as well as suggestions for future research.

Conceptualization

The Modern State and Its Failure

The purpose of this study requires an institutional definition of empirical statehood, because it permits the use of available data for the intended operationalization of state capacity. Arguably the most influential institutional definition of empirical statehood is that of Max Weber (1978) who defines the modern state as "a compulsory political association [that] successfully upholds a claim to the monopoly of the legitimate use of physical force in the enforcement of its order [...] within a given territorial area" (p.54). This definition shall be our conceptual point of departure.

With a view to the global level of analysis of this study, however, we must question the cross-cultural validity of Weber's definition of the modern state. For instance, Williams (2009), Bilgin and Morton (2002) as well as Hagmann and Hoehne (2007 & 2009) argue that state failure is essentially the failure of a specifically European conception of statehood. However, it is precisely because of Europe's deliberate and forceful propagation of its "state model" in the rest of the world that the modern state as described by Weber has become the universal form of political organization at the national level (Badie, 2000, pp.48-87; Schneckener, 2006, pp.19-20). In any event, Zartmann (1995) contends that only the Weberian state is capable of

performing “a set of functions that need to be performed for the coherence and the effectiveness of the polity – *anywhere*” (p.7; see also Mann, 1984, pp.119-120).

In a different vein, Stepputant and Engberg-Pedersen (2008, p.29) argue that Weber’s definition is inappropriate as a global referent for empirical statehood, because it has acquired a normative quality. However, one must not forget that the ideal type described by Weber is in fact nothing but a “mental construct [that] cannot be found empirically anywhere in reality” (Weber, 1949, p.90). As such, the Weberian state “is not itself a hypothesis, but it allows one to build hypotheses on deviations, variations, and totally different forms” (Migdal & Schlichte, 2005, p.3; see also Schneckener, 2006, p.20).

Finally, meaningful comparative analysis at the global level requires that the phenomenon in question be measured against a common yardstick, i.e., “talking about a single state (as so many case studies do) as ‘failed’, ‘failing’ or ‘weak’ is meaningless without an accepted referent” (Lambach & Debiel, 2007, p.34; see also Schneckener, 2004, p.512).

State Capacity

We argue that state failure is a condition at the lower end of a continuum of state capacity, i.e., state failure cannot be measured in and by itself – it is an expression of state capacity or rather the lack thereof. State capacity has been defined as the ability of the state to translate policies into action (Geddes, 1994, p.14; Kjaer et al., 2002). This ability needs to be clearly differentiated from the state’s *scope* of activities, because the functions taken on by a state are different from its capacity to effectively carry them out (Fortin, 2008, pp.2-4; Fukuyama, 2004, pp.7-9). This distinction is all the more important with respect to Weber’s definition of the modern state, because Weber contends that it is not possible to define the state “by reference to the ends to which it orients its activity. [...] such an organization can only be defined by referring to a means [...] which is specific to it and intrinsic to its essence” (quoted

in Poggi, 1990, p.14). This is so, because "there is no activity that states always perform and none that they have never performed" (Jessop, 2008, p.3).

What is unique to the state and differentiates it from other social organizations is its claim to the monopoly of the legitimate use of force as a means of exercising social power (Poggi, 1990, pp.8-12). Hence, we consider the state's capacity to successfully uphold its claim to the monopoly of the legitimate use of force as the minimum criterion for successful statehood (cf. Herbst, 2000, pp.254-255; Hoeffler, 2010, p.2; Schneckener, 2006, p.22; Townshend, 2007, p.9; Weinstein et al., 2004, p.15). This coercive capacity in turn, however, rests on the state's capacity to command more resources than any of its competitors. At the most basic level these resources are capital (Skocpol, 1985, pp.16-17; Thies, 2009, p.5; Tilly, 1985) and legitimacy (Gilley, 2006, p.499; Lamb, 2005, p.2; Morris, 2008).

The state's capacity to mobilize fiscal revenue is widely recognized as "the bottom-line of state capacity" (Kjaer et al., 2002, p.20; see also Ardant, 1975; Bräutigam, 2008 & 2002; Cheibub, 1998; Levi, 1988; North, 1981; Steinmo, 1993; Therkildsen, 2000). In fact, Skocpol (1985) contends that "[a] state's means of raising and deploying financial resources tell us more than could any other single factor about its existing (and immediately potential) capacities to create or strengthen state organizations" (p.17; see also Lieberman, 2002). Empirical studies show that states that are incapable of raising revenue effectively "are limited in the extent to which they can provide security, meet basic needs or foster economic development" (Bräutigam, 2008, p.1; see also Bates, 2008).

The issue of legitimacy is more complex. With respect to the state, legitimacy is usually defined as the citizens' acceptance of the state's possession and exercise of power as rightful (Gilley, 2006, p.502; Migdal, 1988, pp.32-33; Schaar, 1984, p.108). Because physical violence can bring state capacity into being, but cannot sustain it in the long run, states regardless of regime type "try to generate a belief in the obedience-worthiness of their rule, which will in normal circumstances secure the acceptance of their decisions without resort to

overt coercion" (White, 1986, p.462; see also Schaar, 1984, p.111; Jackman, 1993, p.38; Mann, 1984, p.124; Easton, 1965, p.276).

Although legitimacy is arguably the "master question in politics" (Crick, 1993, p.150), it seems almost "impossible to develop common criteria for evaluating the procedure by which consent is manufactured," because legitimacy encompasses normative, legal, cultural and sociological meanings, which will vary across and even within societies (Jackman, 1993, p.109). The general difficulty of measuring legitimacy cross-nationally has been demonstrated by Gilley (2006) and discussed at length by Weatherford (1992). Consequently, "there is no existing cross-national data set on the legitimacy of states, much less an agreed way of creating one" (Gilley, 2006, p.500).

Notwithstanding the problems of defining and measuring legitimacy, it has been argued that democracy promotes a state's political legitimacy through popular political participation (Dahl, 1989 & 2006). However, with respect to this *input* legitimacy, it is important to distinguish between the state and its government, because even when the government is democratically elected, the exigencies of public administration create non-democratic decision-making processes within the state bureaucracy, which therefore constitutes the "black hole of democracy" (Rothstein, 1998 & 2008).

Besides *input* legitimacy, the state may command *output* legitimacy as a function of its overall capacity (Bellina et al., 2009, pp.17-18; Booth and Seligson, 2009; Easton, 1965). Especially non-democratic states, which lack the ability to generate *input* legitimacy through institutional arrangements of popular political participation, appear to be highly dependent on *output* legitimacy (Huntington, 1993). White (1986), for instance, argues that the legitimacy of Communist regimes in Eastern Europe depended primarily on their ability to provide public goods and services as regime and population entered into a social compact, which "involved the surrender of a wide range of political liberties [...] in return for a range of socioeconomic benefits" (p.468). A similar argument has been advanced in the form of the "oil social

compact" with respect to the rentier states of the Middle East (Ayubi, 1995; Beblawi, 1987; Crystal, 1990; Ehteshami, 2003; Luciani, 1987; Ross, 2001; Yates, 1996).

Besides generating output legitimacy, the provision of public goods, especially basic public health and education, can serve as a non-violent means of social control. Mann (1984, 1993, 2008) calls this state capacity "state infrastructural power" and Migdal (1988) "state social control." Essentially, what these two concepts mean is that through the provision of public goods the state creates an infrastructure, which can be utilized for the "successful subordination of people's own inclinations of social behavior or behavior sought by other social organizations in favor of the behavior prescribed by state rules" (Migdal, 1988, pp.22-23). Moreover, the state's capacity to provide services and perform activities that can only be performed effectively if centrally coordinated and that cannot be provided by other power actors allows the state to assume an unrivalled centrality to social life, which endows it with autonomous powers vis-à-vis other social actors (Mann, 1984; 1993, p.59; 2008, p.355; Weiss, 2006, p.172).

Finally, all state capacities are underpinned by the state's administrative capacity to "make effective bureaucratic decisions during the course of implementation" (Geddes, 1994, p.14; see also Carpenter, 2001; Skowronek, 1982; Turner & Hulme, 1997). Empirical studies show that high levels of public sector corruption – implying the relative absence of Weber's professional bureaucracy – are associated with: lower state revenues, lower expenditures on operations and maintenance as well as lower quality of public infrastructure (Abed & Gupta, 2002; Myrdal, 1968; Tanzi & Davoodi, 1997); lower levels of legitimacy (Seligson, 2002); and a reduced security capacity (DeRouen & Sobek, 2004).

State Failure

Having defined the modern state and its core capacities, we are now in a position to define its failure. Although there are almost as many definitions of state failure as there are studies on the topic, most definitions of state failure emphasize the *incapacity* of the state:

- *to claim the monopoly of the legitimate use of force* (Baker & Ausink, 1996; Carment et al., 2008; Clement, 2005; Dearth, 1996; Lambach & Debiel, 2007; Milliken & Krause, 2003; Ottaway & Mair, 2004; Rotberg, 2004, 2003a, 2003b; Schneckener, 2004 & 2006; Townshed, 2007; Weinstein et al., 2004; Zartmann, 1995);
- *to generate revenue* (Carment et al., 2008; Clement, 2005; Lambach & Debiel, 2007; Townshed, 2007);
- *to command legitimacy* (Baker & Ausink, 1996; Carment et al., 2008; Dearth, 1996; Lamb, 2005; Milliken & Krause, 2003; Rotberg, 2004, 2003a, 2003b; Schneckener, 2004 & 2004; Weinstein et al., 2004; Zartmann, 1995);
- *to provide public goods* (Baker & Ausink, 1996; Carment et al., 2008; Clement, 2005; Dearth, 1996; Lamb, 2005; Lambach & Debiel, 2007; Milliken & Krause, 2003; Rotberg, 2004, 2003a, 2003b; Schneckener, 2004 & 2006; Weinstein et al., 2004; Zartmann, 1995).

A striking feature of the above definitions of state failure is the absence of the administrative capacity of the state. However, since the state's administrative capacity underpins all other dimensions of state capacity and because an efficient and professional state bureaucracy cannot be assumed to exist *a priori*, it must be treated as a dimension of state capacity in its own right. In any case, the above definitions highlight the fact that state failure is commonly defined as the absence of state capacity.

Previous Research

Measuring state failure on a continuum of state capacity is one of the few points of consensus in the state failure debate, which has resulted in a growing number of indices of state capacity (Andersen, 2008, p.8). Four indices exist as of 2008: the *Failed States Index*, the *State Fragility Index*, the *Index of State Weakness*, and the *Fragility Index.*

Failed States Index

The Failed States Index (FSI) of the Fund for Peace is arguably the most prominent index of state fragility. It has been published annually since 2005 in cooperation with the journal *Foreign Policy* and covers 177 countries since 2007. The FSI defines a failed state as a state that is

> *losing legitimacy, maintains few or no functioning state institutions, offers few or no public services, [...] lacks a monopoly on the legitimate use of force, and fails to interact in formal relations with other states as a fully functioning member of the international community.* (Baker, 2006, p.5)

This definition largely mirrors our definition of state capacity. Only the state's capacity to generate revenue is missing. Also, if the capacity to "interact in formal relations with other states" is to mean juridical statehood in the sense of Jackson and Rosberg (1982), it would not constitute an aspect of empirical statehood.

The FSI is compiled using the Conflict Assessment System Tool (CAST) developed by Pauline Baker (2006), which measures state capacity across twelve indicators that are grouped into social, economic and political dimensions. A closer inspection of the individual indicators makes clear that the operationalization is largely disconnected from the conceptualization of state failure. For instance, some of the social indicators such as "demographic pressures" and "human flight" are not indicators of state capacity, but structural risk factors. The same is true for the political indicators "group grievances" and "factionalized

elites." Also, it is unclear why the indicators are grouped into social, economic and political dimensions, rather than into the dimensions of state capacity specified in the conceptualization. As a result, it is unclear which dimension(s) of state capacity each indicator measures.

CAST measures the twelve indicators by scanning tens of thousands of articles of open source media and scientific journals for related key phrases, indexing the content using Boolean algebra and calculating a score for each of the twelve indicators, which are added up to produce an aggregate fragility score (Bryce, 2006, p.12). Unlike other indices, the FSI classifies states into four categories on the basis of their aggregate scores: *sustainable* (0-30), *moderate* (30-60), *warning* (60-90) and *alert* (90-120).

This way of measuring state failure seems suspect, because CAST generates data that reflect nothing but perceptions and opinions in English language media and academic journals. Moreover, the scoring system and the exact methodology of the software have never been published (Bethke, 2009, p.10; Marshall, 2008, p.18; Rice & Patrick, 2008, p.7). Similarly, the raw data are not accessible to the public, because "it is not readily transferable without the methodology and the software" (Fund for Peace, 2012). Consequently, the results of the FSI are not replicable and "[i]f a finding is obtained under circumstances that are essentially un-repeatable, then we rightfully entertain doubts about its veracity" (Gerring, 2010, p.83).

State Fragility Index

The State Fragility Index (SFI) has been developed by Monty G. Marshall and Jack Goldstone as part of the *Global Report* series, which investigates the relationships between conflict, governance and state fragility (Marshall & Goldstone, 2007; Marshall & Cole, 2008; 2009; 2011). It has been published annually from 2007 to 2010 and covers 162 states.

Marshall and Cole (2008) define neither state capacity nor state failure directly, but note that a country's fragility is

> *associated with its state capacity to manage conflict, make and implement public policy; and deliver essential services and its systemic resilience in maintaining system coherence, cohesion, and quality of life; responding effectively to challenges and crises, and continuing progressive development.* (p.17)

The above "definition" is extremely vague, because it is not clear what terms such as "quality of life," "responding effectively to challenges" or "progressive development" mean. Yet, it is possible to read three dimensions of state capacity into the above definition: security ("capacity to manage conflict"); administration ("make and implement public policy"); and infrastructural power ("deliver essential services"). Although not included in the above definition, Marshall and Goldstone (2007, pp.13-14) associate the loss of legitimacy with state failure. The state's capacity to generate revenue, however, is absent from their conceptualization.

Following the guidelines on measuring fragility outlined by USAID in its 2005 report, Marshall and Cole (2008) measure two essential qualities of state performance, effectiveness and legitimacy, across the structural dimensions of "Security," "Economics," "Governance" and "Social Development." The resulting eight dimensions are operationalized in extremely complex ways, which cannot be discussed due to space constraints (see Marshall & Cole, 2008).

In any case, the validity of some of the legitimacy indicators appears questionable upon closer inspection. For instance, it is unclear how infant mortality may be a measure of social legitimacy or how the share of export trade in manufactured goods may be a measure of economic legitimacy. Finally, the index score ranges from 0 to 24 with one point intervals, thus turning the SFI index score effectively into an ordinal variable, e.g., in the 2008 edition 19 states have a score of 0. This aggregation method leads to the loss of information about within-group variation, which makes the detection of borderline cases less accurate.

Index of State Weakness

The Index of State Weakness (ISW) was published in 2008 by the Brookings Institution and assesses the "weakness" of 141 developing countries (Rice & Patrick, 2008).

Rice and Patrick (2008) define weak states as states that

> *lack the essential capacity and/or will to fulfill four sets of critical government responsibilities: fostering an environment conducive to sustainable and equitable economic growth; establishing and maintaining legitimate, transparent, and accountable political institutions; securing their populations from violent conflict and controlling their territory; and meeting the basic human needs of their population.* (p.3)

By conceptualizing state weakness in terms of responsibilities (i.e., ends) rather than capacities (i.e., means), the ISW's definition is highly normative and conflates state capacity with the scope of state activity. Yet, the state's responsibility to "meet the basic human needs of its population" implies the state's infrastructural capacity. Similarly, the state's responsibility to "secure its population from violent conflict and control its territory" implies the state's capacity to successfully claim the monopoly of violence. The state's capacity to command legitimacy, however, is only relevant with respect to input legitimacy as opposed to output legitimacy (Rice & Patrick, 2008, p.8). Finally, the state's capacities to effectively administer its operations and to generate revenue are not specified as dimensions of state capacity.

The ISW measures state weakness across four dimensions, each of which has been operationalized by five indicators:

- *Economic indicators*: GNI per capita; GDP growth; income inequality; inflation; Worldwide Governance Indicators (WGI) "Regulatory Quality" score;

- *Political indicators*: WGI "Government Effectiveness" score; WGI "Rule of Law" score; WGI "Voice and Accountability" score; WGI "Control of Corruption" score; Freedom House Freedom Ratings;
- *Security indicators*: "Conflict Intensity" score; WGI "Political Instability and Absence of Violence" score; incidence of coups, Political Terror Scale score; territory affected by conflict;
- *Social indicators*: Child mortality, primary school completion, undernourishment, access to improved water sources/sanitation; life expectancy.

The careful choice of indicators results in a strong link between the conceptualization and the operationalization as each of the four operational dimensions corresponds to one of the conceptual dimensions. However, we argue that "GDP growth," "income inequality," "voice and accountability," "life expectancy," or Freedom House freedom ratings are not indicators of state capacity. Importantly, Rice and Patrick (2008 pp.30-36) provide an extensive appendix, which lists the rationale for the selection of each indicator, indicates missing data and gives a description of each indicator. This high level of transparency contrasts positively with the FSI and the SFI and makes the results of the ISW replicable.

However, the ISW is not without problems. First, the ISW assesses only the capacity of "the weakest states" (Rice & Patrick, 2008, p.10), which are selected on the basis of the World Bank's 2007 income classification (Rice & Patrick, 2008, p.25). That this logic is flawed is best demonstrated by way of example: Saudi Arabia and Kuwait are excluded from the ISW because they are some of the richest countries in terms of GNI per capita, yet they are classified as weak states by the FSI. Second, since consolidated states are excluded from the analysis and the states' aggregate scores are rescaled in a relative way, the ISW permits only a relative assessment of state capacity among "weak" states.

Fragility Index

The Fragility Index (FI) is part of the Country Indicators for Foreign Policy project headed by David Carment. The index has been published for the years 2006 and 2007 and covers 193 states.

Carment et al. (2006) identify three core dimensions of state "functionality:" authority, legitimacy and capacity. Authority is defined as the state's capacity to exercise coercive force over its national territory. Legitimacy is conceptualized as the state's capacity to command public loyalty and is assumed to be a function of effective governance, i.e., legitimacy is defined as *output* legitimacy (Carment et al., 2006, p.35). Finally, capacity is defined as "the power of a state to mobilize and employ resources towards productive ends," which presupposes the existence of an effective administration and infrastructural power (Carment et al., 2006, p.36).

The operationalization of the above dimensions occurs in two steps. In the first step, 75 structural indicators covering the dimensions "Governance," "Economics," "Security and Crime," "Human Development," "Demography" and "Environment" are evaluated to arrive at a structural assessment of each country. In the second step, consensual expert assessment determines to what extent each of the 75 structural indicators captures the authority, capacity, and legitimacy dimensions of a given state (Carment et al., 2006, pp.36-37).

This operationalization process is utterly perplexing. Firstly, it is not documented which "structural" indicators are ultimately assigned to which of the three state capacity dimensions and on the basis of what criteria. Secondly, it is unclear why the indicators are grouped into six "structural" dimensions, rather than being assigned from the very beginning to one of the three state capacity dimensions. Thirdly, the dimensions "Demography" and "Environment" do not measure state capacity, but are structural risk factors. Finally, the calculation of the index score is not disclosed.

In essence, each of the four existing indices of state capacity suffers from substantial shortcomings:

- The *Failed States Index* is plagued by a weak link between the conceptualization and the operationalization, and a complete lack of transparency, which makes the replication of its results impossible.
- The *State Fragility Index* suffers from a vague conceptualization, a weak link between the conceptualization and the operationalization, an overly complex operationalization and a method of aggregation, which effectively turns its index score into an ordinal variable.
- The *Index of State Weakness* stands out as the most transparent of all indices and its careful choice of indicators results in a strong link between the conceptualization and the operationalization. However, its comparative utility is limited by its exclusive focus on developing countries.
- The *Fragility Index* is plagued by a complete lack of transparency and there appears to be no link between the conceptualization and the operationalization. Consequently, its results are not replicable and it is unclear what it measures.
- Except for the FSI, none of the above indices provides classification results.

The present study aims to remedy these shortcomings by developing a new State Capacity Index that is (i) transparent; (ii) replicable; (iii) easy to use; (iv) global in its scope; (v) characterized by a strong link between the conceptualization and the operationalization; and (vi) based on a parsimonious set of theoretically valid and statistically significant indicators of state capacity. Moreover, the statistical model underpinning the State Capacity Index will not only allow for the determination of a state's *degree* of capacity, but also for its *classification* as strong, weak or failed.

Analysis

In this section, we first conduct a second order confirmatory factor analysis in AMOS to test the theoretically deduced dimensionality of the latent concept state capacity. In a second step, we run a multiple discriminant analysis in SPSS to develop the general assessment and classification model that underpins the State Capacity Index. Finally, we test the construct validity (i.e., convergent validity) of the State Capacity Index.

Variable Selection

The variable selection was primarily guided by our theoretical discussion of state capacity.[1] In addition, the variables must be:

- accessible free of charge and not subject to other restrictions;
- updated annually;[2]
- continuous or ordinal with at least five categories;[3]
- available for all of the 177 countries included in the FSI;[4] only five per cent of data may be missing for any one variable, in order to keep the amount of imputed data at a minimum;
- the variables must not exhibit characteristics of extreme non-normality or feature a great number of outliers.[5]

[1] Please note that the data collected for the subsequent statistical analyses is from 2007, because 2008 is the only year in which all indices have been published simultaneously (based on data from 2007) with the exception of the *Fragility Index*, the latest edition of which was published in 2007, but unlike the other indices it is actually based on 2007 data. This point is important since we want to test the construct validity (i.e., convergent validity) of our State Capacity Index by correlating its index score with the aggregate scores of the other indices of state capacity. Also, the 2008 edition of the FSI (based on 2007 data) serves as the training set for the multiple discriminant analysis. Hence, our own data must be from 2007 to avoid a temporal mismatch in the analyses.

[2] We aim for annual updates of the State Capacity Index.

[3] Both confirmatory factor analysis and multiple discriminant analysis are based on correlational analysis.

[4] The 2008 FSI classification results serve as a training set for the multiple discriminant analysis. Hence, we aim for the same country coverage as the FSI.

[5] Multiple discriminant analysis is sensitive to violations of the assumption of multivariate normality and large numbers of outliers (Klecka, 1980). Confirmatory factor analysis is sensitive to violations of the assumption of multivariate normality, especially when using maximum likelihood as an estimation method. To correct for violations of normality and outliers, the use of variable transformations is recommended (Tabachnick & Fidell, 1996).

Based on the above criteria, the following variables have been selected as indicators of state capacity:

- *Security capacity*: Political Stability score; Political Terror Scale score.
- *Administrative capacity*: Control of Corruption score; Regulatory Quality score.
- *Infrastructural capacity*: tuberculosis prevalence rate; primary school enrolment or attendance rate.

Please see Table A1 in the appendix for detailed information on the indicator variables.

Neither the revenue nor the legitimacy dimension of state capacity could be operationalized as potential indicator variables failed at least one of the above selection criteria. For instance, the only global data set including some measures of legitimacy – the World Values Survey – covers only 87 countries (featuring few weak and almost no failed states) and the variables in question are ordinal with only four categories. Concerning the revenue capacity, the variable "tax revenue as per cent of GDP" (World Bank) would have been an ideal indicator, but 40.7 per cent of data are missing for the states included in the data set (especially for weak and failed states). In the end, the selected indicators of state capacity cover 172 of the 177 states included in the FSI, i.e., the sample size is N = 172.

Confirmatory Factor Analysis

Based on our theoretical discussion of state capacity, and paying tribute to general data limitations, we hypothesize that state capacity is a second order factor with three first order factors: security, administration and infrastructure (see Figure 1).

In order to test the hypothesized model, we conduct a maximum likelihood second order confirmatory factor analysis in AMOS. The resulting model is shown in Figure 2 with standardized coefficients.

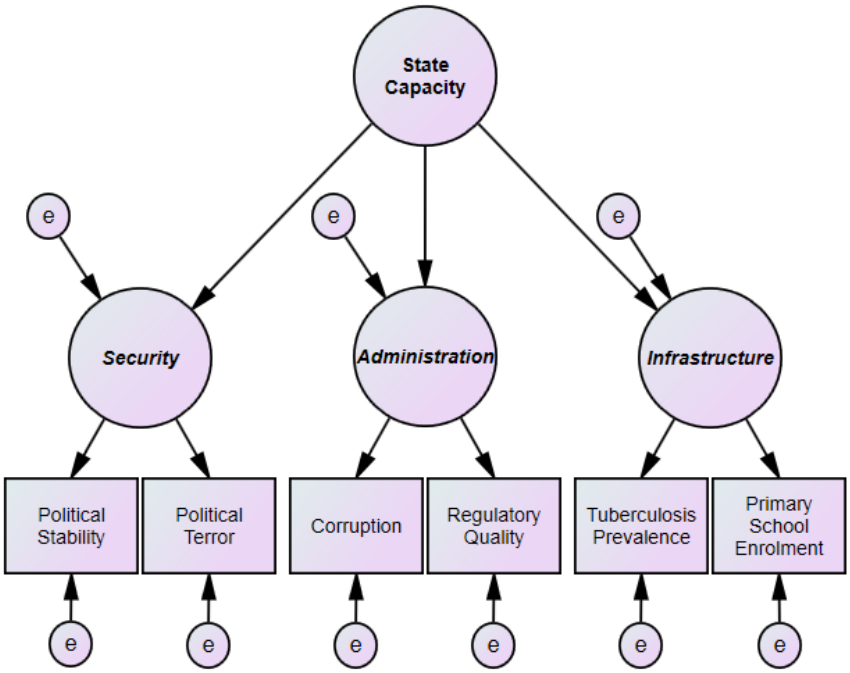

FIGURE 1: The Hypothesized Model

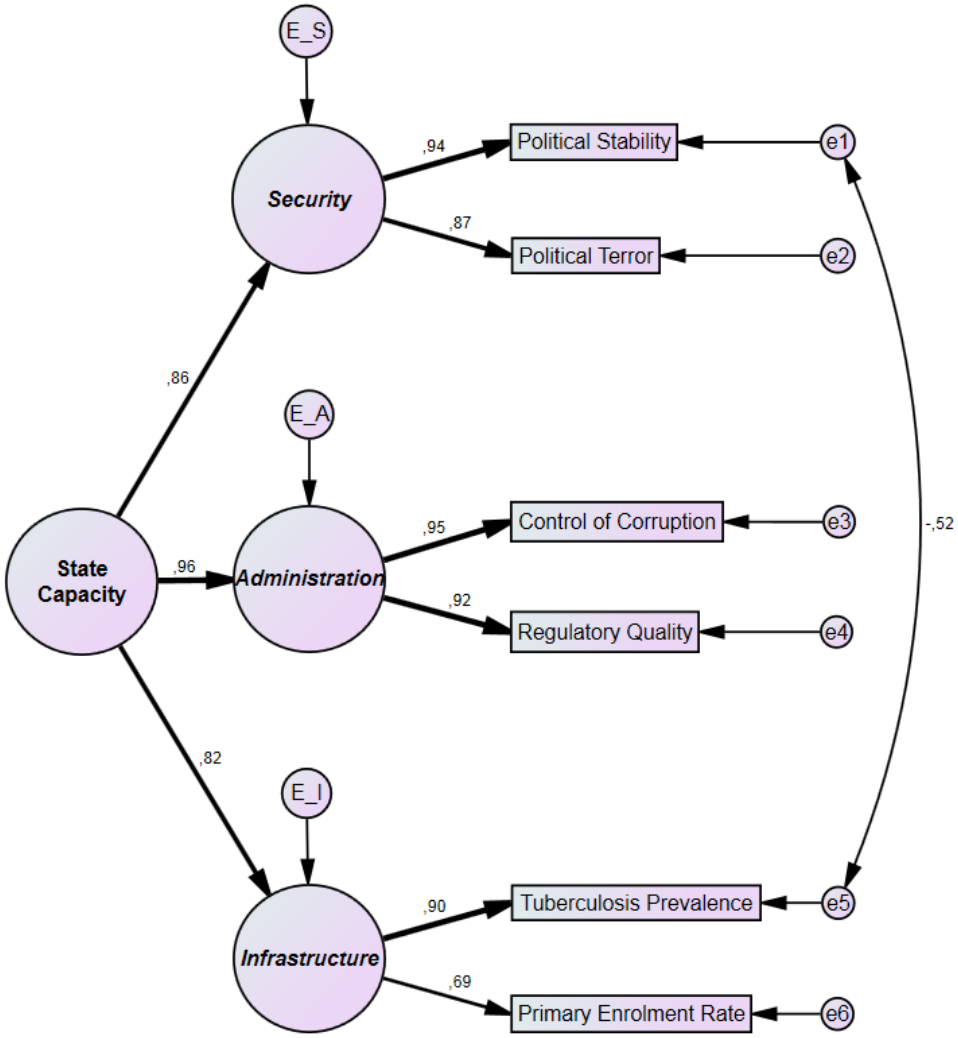

FIGURE 2: The Hypothesized Model with Standardized Coefficients

We modified the hypothesized model by co-varying the error terms of "Political Stability" and "Tuberculosis Prevalence," because we wanted to account for the fact that the level of basic public health is affected by the security situation; tuberculosis is much more prevalent in war-stricken countries than in havens of peace and stability (Barr & Menzies, 1994; Doveren, 2001; Gustafson et al., 2001; Khan & Laaser, 2002). Yet, we argue that "Tuberculosis Prevalence" is primarily an indicator of the infrastructural capacity of the state.[6] No other constraints or modifications have been imposed on the hypothesized model.

The first thing to note about the standardized coefficients is that they are very large (see Table 1). Three reasons may account for this: first, the data analyzed is aggregate data, which usually contain less noise than non-aggregate data; second, no data is missing, i.e., only two variables have missing data – 0.58 and 3.5 per cent, respectively – which are dealt with by way of multiple imputation (Rubin, 1987); third, the sample comprises 172 countries, i.e., with the exception of some small island states (e.g., Timor-Leste or Vanuatu) and sovereign entities such as Liechtenstein, Monaco or the Vatican, all states in the world are included in our sample, which therefore captures (almost) all the variation that exists in the population.

Second Order Factor	First Order Factor	Manifest Variable	β	B	P	SE
State Capacity	Security		.855	.861	<.001	.081
State Capacity	Administration		.956	1.000	<.001	
State Capacity	Infrastructure		.819	1.441	<.001	.144
	Security	Political Stability	.938	1.000	<.001	
	Security	Political Terror	.870	1.038	<.001	.067
	Administration	Control of Corruption	.946	1.000	<.001	
	Administration	Regulatory Quality	.921	.970	<.001	.047
	Infrastructure	Tuberculosis Prevalence	.901	1.000	<.001	
	Infrastructure	Primary Enrolment Rate	.692	.451	<.001	.051

TABLE 1: Standardized and Unstandardized Coefficients

[6] Compared to the "Infrastructure" dimension (β = .90; p < .001), the "Security" dimension predicts "Tuberculosis Prevalence" less well (β = .65; p < .001).

Generally, "State Capacity" predicts the "Administration" dimension most strongly. This finding is in line with Weber's definition of the modern state and our own argument concerning the centrality of the administrative capacity of the state. "State Capacity" also strongly predicts the "Security" dimension as evidenced by β = .855. This finding also resonates with our theoretical discussion. The "Infrastructure" dimension is predicted less strongly by "State Capacity," although only in comparative rather than absolute terms. We would argue that the infrastructural power of the modern state is not as central to its functioning or survival as the other two dimensions – it has developed as an additional, non-violent means of social control (Mann, 1984 & 1993). Finally, we should note that the signs of the coefficients conform to expectations.[7]

The hypothesized model fits the data well according to commonly accepted thresholds (see Hooper et al., 2008; Schreiber et al., 2006). For sake of brevity, the goodness-of-fit measures are reported in Table 2 below.

Goodness-of-fit measures	Second Order Model (covariance of e1-e5)	Second Order Model (w/o modification)	Unifactorial Model
χ^2	3.044	10.071	98.428
P	.693	.122	.000
CMIN/DF	.609	1.678	12.303
CFI	1.000	.995	.882
PRATIO	.333	.400	.533
RMSEA	.000	.063	.257
PCLOSE	.843	.317	.000
AIC	35.044	40.071	124.428

TABLE 2: Goodness-of-Fit Measures

Importantly, the hypothesized second order model fits the data considerably better than the unifactorial model (compare AIC in Table 2), which assumes that the latent construct "state capacity" is a first order factor without sub-dimensions. Even when we test the hypothesized

[7] Please note that in order to ease interpretation, the variables "Political Terror" and "Tuberculosis Prevalence" have been reverse scored such that high scores mean low levels of political terror and tuberculosis prevalence, respectively.

model without the modification (i.e., covariance e1-e5), its model fit remains good according to commonly accepted thresholds and is still considerably better than that of the unifactorial model.

Multiple Discriminant Analysis

Having thus confirmed the hypothesized dimensionality of the latent concept "state capacity," we can now proceed to the development of the statistical model that underpins the State Capacity Index. The model must be able to determine a state's degree of capacity and to classify it as strong, weak or failed.

To this end, we conduct a multiple discriminant analysis (MDA) in SPSS which constructs so called *discriminant functions* – linear combinations of continuous observed variables that best discriminate between naturally occurring groups (Dillon & Goldstein, 1984, p.360; Huberty, 1994, p.29; Lattin et al., 2003, p.426). The groups are defined by the levels of the categorical dependent variable, i.e., the group membership of each case is defined by its value on the dependent variable. The present study uses the classification results of the 2008 edition of the FSI as the dependent variable, because no other index of state capacity provides classification results.[8] It is important to note, however, that although the FSI classification results are used as an *a priori* classification, the MDA does not reproduce the classification results of the FSI, for the latter observations are only used as a so called "training set," on the basis of which the MDA determines which linear combinations of the predictor variables discriminate best between strong, weak and failed states.

MDA constructs *n*-1 discriminant functions for a dependent variable with *n* categories. In order to determine the meaning of a particular discriminant function and its corresponding discriminant function score, one must examine the correlations of each predictor variable with

[8] While the FSI classifies countries into four groups, the SCI employs only a three-group classification scheme. Hence, the two FSI categories "sustainable" and "moderate" are collapsed into the SCI category "strong." This decision seems justified, given that only fifteen countries are categorized by the FSI as "sustainable" and that undoubtedly strong countries such as France or Germany are categorized as "moderate." The FSI categories "warning" and "alert" correspond to the SCI categories "weak" and "failed," respectively.

each discriminant function. These so called structure coefficients (or discriminant loadings) can be interpreted in the same way as the factor loadings in exploratory factor analysis (Tabachnick & Fidell, 1996, p.539).

Once the discriminant functions have been constructed, MDA proceeds to the construction of so called *classification functions*, on the basis of which one can predict to which of the pre-defined groups (i.e., strong, weak or failed) a particular case (i.e., state) most likely belongs; this is what Huberty (1994) calls predictive discriminant analysis. Classification functions are linear combinations of the same predictor variables that have been used for the construction of the discriminant functions. However, the classification functions are not identical to the discriminant functions.[9] One classification function is constructed for each group or category of the dependent variable. A case's observed values on the predictor variables will be inserted into the classification function for each group; the case will be classified into the group for which it has the highest classification function score (Tabachnick & Fidell, 1996, pp.517-519).

In essence, the discriminant functions can be used to determine the *degree* of state capacity, while the classification functions can be used to *classify* states as strong, weak or failed.

Overall, both discriminant functions produced by the discriminant analysis are able to significantly discriminate between the three groups of strong, weak and failed states (DF1 through DF2: Wilks' $\lambda = .217$, $\chi^2 (8) = 254.1$, $p < .001$; DF2: Wilks' $\lambda = .826$, $\chi^2 (3) = 31.9$, $p < .001$). However, we argue that the first discriminant function alone suffices as a measure of state capacity. First, the Wilks' λ of .217 tells us that 21.7 per cent of the variance in the dependent variable are not explained by the two discriminant functions (Burns & Burns, 2008, p.599), i.e., 78.3 per cent are explained, of which the first and second discriminant functions

[9] In a simple two-group discriminant analysis, the discriminant function can be used for classification purposes. This is not the case, however, when conducting a *multiple* discriminant analysis, i.e., with more than two groups. Here, the classification functions are derived from the *n*-1 discriminant functions as a result of which the classification functions have coefficients different from the discriminant functions. Consequently, in case of a multiple discriminant analysis, the classification functions are to be used for classification purposes.

account for 93 and 7 per cent, respectively. Second, when we look at the discriminant loadings in Table 3, we can see that all state capacity indicators load more strongly onto the first discriminant dimension, which means that the first discriminant function describes a holistic state capacity dimension.

State Capacity Indicators	DF 1	DF 2
Political Stability	.754	.453
Regulatory Quality	.744	-.420
Control of Corruption	.717	-.601
Political Terror	.598	.148
Tuberculosis Prevalence	.497	-.188
Primary School Enrolment/Attendance	.404	.078

TABLE 3: Structure Matrix

In order to determine a state's *degree* of capacity, one has to: (i) collect the data for the state in question on the state capacity indicators; (ii) apply the respective variable transformations (see Table A1 in the appendix); and (iii) insert the (transformed) values into the first discriminant function, which takes the following form:

$$D = a + b_1x_1 + b_2x_2 + b_3x_3 + \ldots + b_nx_n$$

D is the discriminant function score; *a* is the constant (see Table 4); b_n is the respective unstandardized discriminant function coefficient for the n^{th} variable (see Table 4); and x_n is the state's observed value on the n^{th} variable.

The resulting discriminant function looks as follows:

D_1 = (-1.198) + (0.837*Political Stability) + (0.134*Control of Corruption) + (0.660*Regulatory Quality) + (0.143*Political Terror) * (0.143*Tuberculosis Prevalence) + (0.228*Primary School Enrolment/Attendance)

The first discriminant function score defines the State Capacity Index (SCI) score. For a ranking of the 172 states on the basis of their SCI score, see Table A2 in the appendix.

State Capacity Indicators	Discriminant Function Coefficients for DF1
Political Stability	.837
Control of Corruption	.134
Regulatory Quality	.660
Political Terror	.143
Tuberculosis Prevalence	.143
Primary School Enrolment/Attendance	.228
Constant	-1.198

TABLE 4: Unstandardized Discriminant Function Coefficients for DF1

In order to classify a state as strong, weak or failed, one has to: (i) collect the data for the case in question on the state capacity indicators; (ii) apply the respective variable transformations (see Table A1 in the appendix); (iii) insert the (transformed) values into the three classification functions; and (iv) see for which group the case receives the highest score; the state will be classified into the group for which it has the highest classification score.

The classification functions take the following form:

$$C = a + b_1x_1 + b_2x_2 + b_3x_3 + \ldots + b_nx_n$$

C is the classification score; *a* is the respective constant (see Table 5); b_n is the respective classification function coefficient for the n^{th} independent variable (see Table 5); and x_n is the state's observed value on the n^{th} independent variable.

State Capacity Indicators	Strong	Weak	Failed
Political Stability	-5.341	-6.399	-9.893
Control of Corruption	-0.650	-2.191	-0.866
Regulatory Quality	0.410	-1.399	-2.813
Political Terror	9.393	8.939	8.171
Tuberculosis Prevalence	0.986	0.652	0.265
Primary School Enrolment/Attendance	2.942	2.449	1.781
Constant	-26.388	-19.902	-21.636

TABLE 5: Classification Function Coefficients

The classification functions for the three groups look as follows:

$\mathbf{C_{STRONG}}$ = (-26.388) + (-5.341*Political Stability) + (-0.650*Control of Corruption) + (0.410*Regulatory Quality) + (9.393*Political Terror) + (0.968*Tuberculosis Prevalence) + (2.942*Primary School Enrolment/Attendance Rate)

$\mathbf{C_{WEAK}}$ = (-19.902) + (-6.399*Political Stability) + (-2.191*Control of Corruption) + (-1.399*Regulatory Quality) + (8.939*Political Terror) + (0.652*Tuberculosis Prevalence) + (2.449*Primary School Enrolment/Attendance Rate)

$\mathbf{C_{FAILED}}$ = (-21.636) + (-9.893*Political Stability) + (-0.866*Control of Corruption) + (-2.813*Regulatory Quality) + (8.171*Political Terror) + (0.265*Tuberculosis Prevalence) + (1.781*Primary School Enrolment/Attendance Rate)

For the classification results of the 172 states based on the above classification functions, see Table A2 in the appendix.[10]

The above classification model classifies 86 per cent of cases correctly (see Table 6), i.e., 86 per cent of states are classified correctly into their respective group as defined by their value on the dependent variable (i.e., the FSI classification). This does not mean that the 14 per cent of states that have been "misclassified" are "incorrectly" classified; rather 14 per cent of states have been classified differently compared to their FSI classification. Importantly, none of the strong states are misclassified as failed and vice versa.

Since the classification model is based on classification coefficients derived from a particular sample and "they usually work too well for the sample they are derived from" (Tabachnick & Fidell, 1996, p.544), it is important to see how our classification results generalize to an independent sample by performing a so called leave-one-out cross-validation where each case is classified by the functions derived from all cases other than that case.

[10] It is important to note that there is no perfect one-to-one correspondence between the SCI scores (i.e., the first discriminant function score) and the classification results, because the classification functions are derived from both discriminant functions, which explains the "fuzziness" of classifications in the "transition areas" between the groups in Table A2.

			Predicted Group Membership		
			Strong	**Weak**	**Failed**
Original	Count	**Strong**	42	5	0
		Weak	4	84	6
		Failed	0	9	22
	Per cent	**Strong**	89.4	10.6	0.0
		Weak	4.2	89.4	6.4
		Failed	0.0	29.0	71.0

TABLE 6: Classification Results

The classification model classifies 85 per cent of cross-validated cases correctly (see Table 7). Its classification accuracy for strong and failed states remains unchanged, but has been slightly reduced for weak states (two additional misclassifications).

			Predicted Group Membership		
			Strong	**Weak**	**Failed**
Original	Count	**Strong**	42	5	0
		Weak	6	82	6
		Failed	0	9	22
	Per cent	**Strong**	89.4	10.6	0.0
		Weak	6.4	87.2	6.4
		Failed	0.0	29.0	71.0

TABLE 7: Classification Results of the Leave-One-Out Cross-Validation

In the end, the "classification overlap" between the SCI and the FSI is nothing short of astonishing given that the two indices use widely different variables as indicators of state capacity and employ completely different methodologies for the calculation of their index scores.

Convergent Validity

Finally, in order to have confidence in the SCI as a valid measure of state capacity, we must demonstrate its construct validity. Construct validity has a wide range of meanings, but can be defined as the extent to which an operationalization actually measures what it purports to

measure (Brown, 1996 & 2000). One type of construct validity is convergent validity, which tests the assumption that "two or more measures of the same thing should co-vary highly if they are valid measures of the concept" (Bagozzi et al., 1991, p.425; see also Westen & Rosenthal, 2003). To this end, we correlate the SCI score with the aggregate scores of the FSI, FI and the ISW; the SFI is excluded from this analysis, because its aggregate score is an ordinal variable.

We can see from Figure 3 through Figure 5 that the SCI score correlates very strongly with the aggregate scores of the FSI (r = -.922; p < .001), the FI (r = -.944; p < .001) and the ISW (r = .911; p < .001).[11] When we square the correlation coefficients, we see that the SCI accounts for 85, 89 and 83 per cent of variance in the FSI, FI and ISW, respectively. Ultimately, these strong and significant correlations can be interpreted as an indication of the SCI's validity as a measure of state capacity.

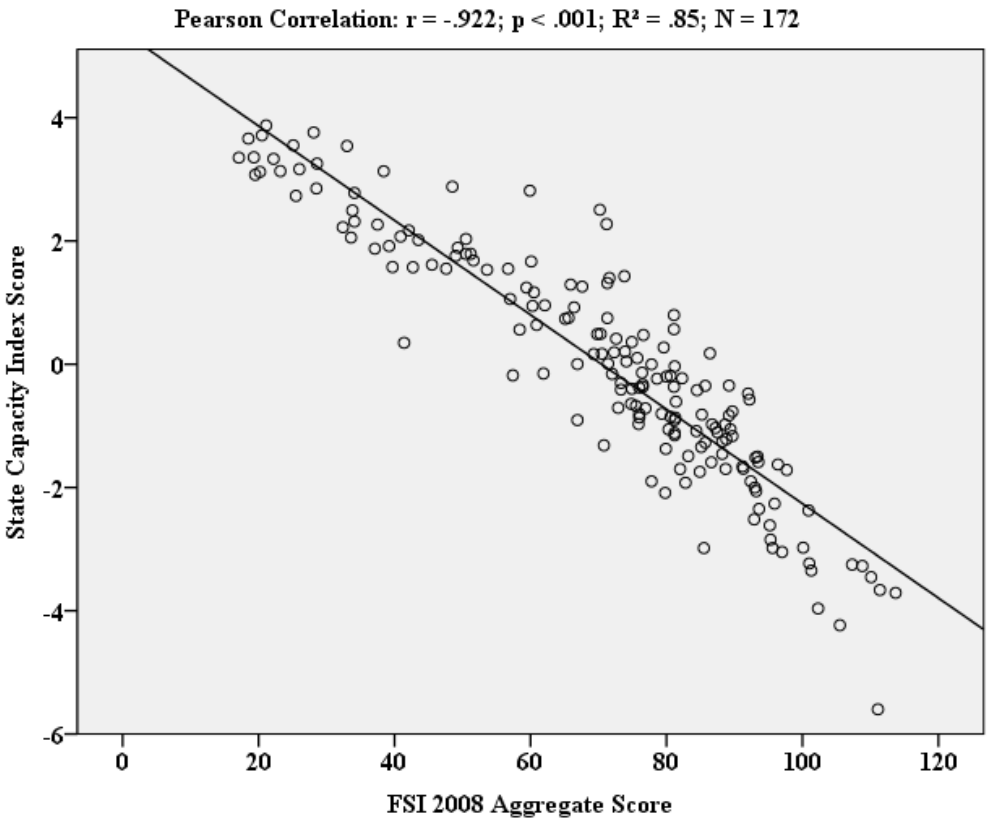

FIGURE 3: Correlation between SCI and FSI

[11] The correlations with the FSI and the FI are negative, because in both cases higher scores indicate less state capacity.

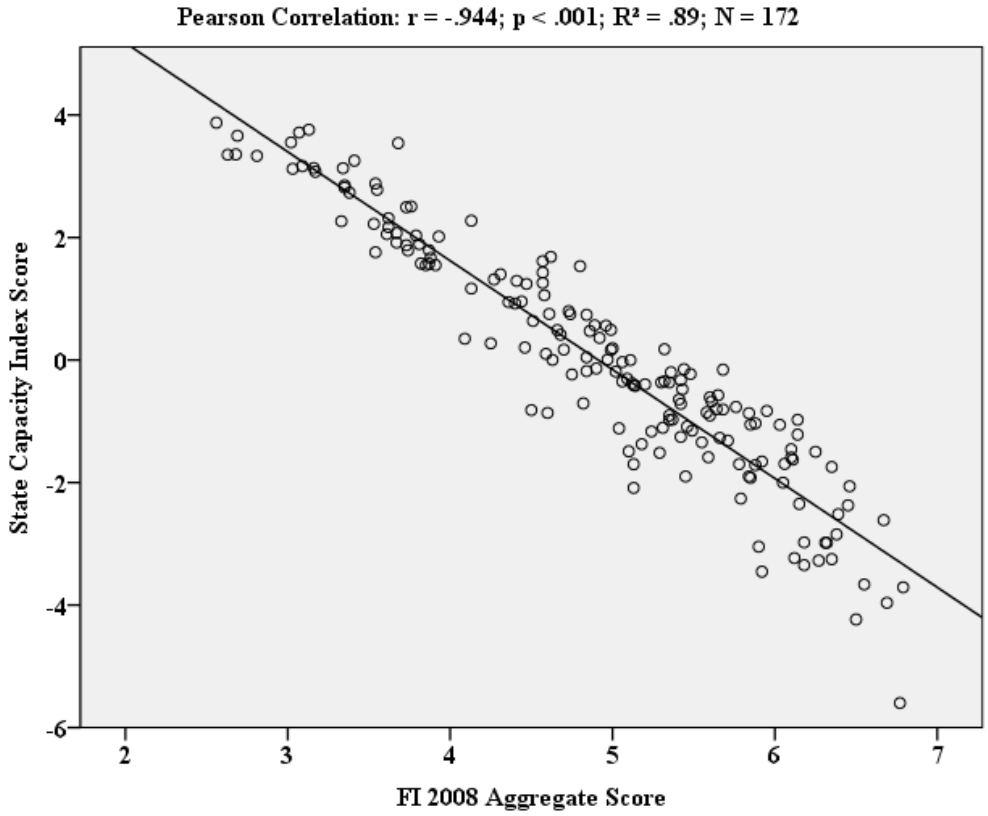

FIGURE 4: Correlation between SCI and FI

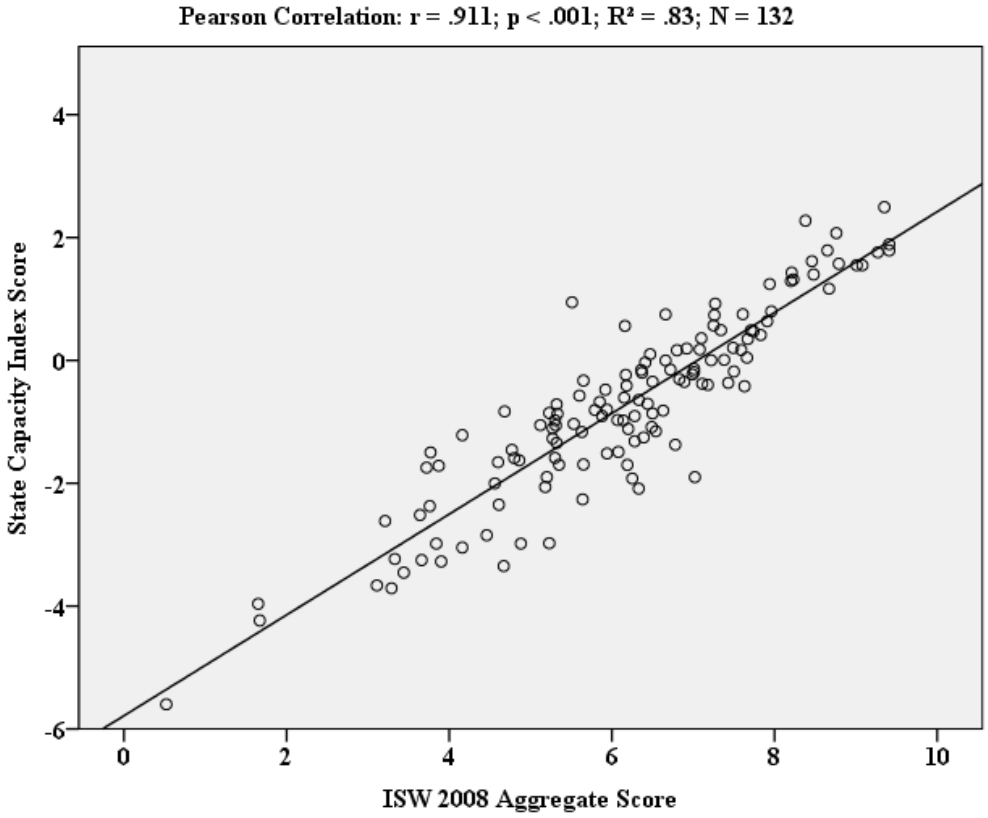

FIGURE 5: Correlation between SCI and ISW

Conclusion

The renewed interest in the phenomenon of state failure has resulted in the creation of various indices of state capacity in recent years. Such indices can be useful tools for policy makers and researchers. However, all existing indices suffer from substantial shortcomings that undermine their validity and limit their utility. This paper set out to remedy these shortcomings by developing a new State Capacity Index (SCI) that is theoretically grounded, user-friendly, and replicable – everything that existing indices of state capacity are not.

The development of the State Capacity Index was predicated on two assumptions: first, state failure can only be meaningfully measured on a continuum of state capacity; second, state capacity has five dimensions: the capacity to claim the monopoly of the legitimate use of force (security); to effectively administer its operations (administration); to command legitimacy from its population (legitimacy); to generate sufficient revenue to finance its operations (revenue); and to regulate its population through the use of non-violent means of social control (infrastructure).

Due to general data limitations, it was not possible to operationalize the legitimacy and revenue dimensions of state capacity. Hence, we hypothesized that state capacity is a second order factor with three first order factors: security, administration and infrastructure. We conducted a second order confirmatory factor analysis and found that the hypothesized model fits the data well, both in absolute terms and compared to the unifactorial rival model.

Next, we conducted a multiple discriminant analysis (MDA) in order to develop the statistical model that underpins the State Capacity Index. The first discriminant function produced by the MDA proved to be a valid measure of a state's degree of capacity as evidenced by the test of its convergent validity. The classification functions produced by the MDA classified 85 per cent of cross-validated cases correctly as strong, weak or failed, i.e., only 15 per cent of the 172 states included in the analysis were classified differently compared to the most prominent index of state capacity, the Failed States Index, which served as the training set for the MDA.

What these results show is that a simple linear model with no more than six carefully selected variables measures the capacity of the world's states as accurately as the most complex existing indices. Moreover, the SCI is easily replicable, open to modifications and can be calculated with open source data that is updated annually. Beyond its original purpose, the SCI score can be used as a dependent variable in predictive and causal studies on state failure that employ regression analysis.

However, we also need to mention the shortcomings. First, the statistical techniques chosen for the development of the SCI forbade the use of potentially useful indicators of state capacity (e.g., categorical variables). Secondly, due to a general lack of data, it was not possible to operationalize the "revenue" and "legitimacy" dimensions of state capacity. It is upon future research to find ways to operationalize these two dimensions of state capacity.

More generally, future research on measuring state capacity and state failure needs to take into account the changing nature of the modern state, especially in Europe. The European Union is not only having an impact on the sovereignty of its member states, but also on their likelihood of experiencing state failure. The partial default of the Greek state in 2011/2012 is a case in point: albeit its capacity to finance its operations effectively ceased to exist, it did not experience the full consequences of this partial state failure, because of novel supranational institutions such as the European Financial Stability Mechanism and the European Stability Mechanism as well as the help of the International Monetary Fund.

Beyond Europe, the international system as a whole is undergoing great changes as a consequence of the processes of globalization. The anarchy of the international system described by Kenneth Waltz (1979) is giving way to unprecedented levels of international interconnectedness, which may in part explain the renewed interest in the phenomenon of state failure; interdependencies mean shared risk, which is why state failure with its far reaching and oftentimes incalculable consequences must be avoided at all costs – today more than ever.

In the end, it is important to realize that statistical models are no substitute for the expertise of country and subject matter experts. Nevertheless, the State Capacity Index presents a valid and useful diagnostic tool, which can assist both quantitative and qualitative researchers as well as policy makers and practitioners in their endeavors to gain a better understanding of and develop solutions to the causes and consequences of state failure by enabling them to accurately identify failing and failed states in a cost and time saving way that did not exist until now.

APPENDIX

TABLE A1: Selected Indicators of State Capacity

Security Capacity		
Political Stability & Absence of Violence Score	*Description of Variable*	Captures "perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism" (Kaufmann et al, 2009, p.6)
	Rationale for Inclusion	Use is recommended by USAID (2005) and Mata and Ziaja (2009); used by FI and ISW
	Data Source	Worldwide Governance Indicators
	Annual Availability	Yes
	Transformation	No
	Missing Data (%)	0
Political Terror Scale	*Description of Variable*	Measures state-sanctioned killings, torture, disappearances and political imprisonment (Gibney et al., 2012)
	Rationale for Inclusion	Use is recommended by USAID (2005); used by ISW and SFI
	Data Source	Worldwide Governance Indicators
	Annual Availability	Yes
	Transformation	No
	Missing Data (%)	0.58
Infrastructural Capacity		
Tuberculosis Prevalence	*Description of Variable*	Tuberculosis prevalence rate per 100,000 population
	Rationale for Inclusion	Indicator of the state's capacity to provide basic public health care
	Data Source	World Health Organization
	Annual Availability	Yes
	Transformation	Natural logarithm (ln)
	Missing Data (%)	0
Primary School Net Enrolment or Attendance Ratio	*Description of Variable*	"Number of children enrolled in or attending primary school, expressed as a percentage of the total number of children of primary school age." (UNICEF, 2012)
	Rationale for Inclusion	Indicator of the state's capacity to provide basic public education
	Data Source	UNICEF The State of the World's Children
	Annual Availability	Yes
	Transformation	Natural logarithm (ln)
	Missing Data (%)	3.49 (multiple imputation; Rubin, 1987)

Administrative Capacity		
Control of Corruption score	*Description of Variable*	Captures "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests" (Kaufmann et al., 2009, p6)
	Rationale for Inclusion	High levels of public sector corruption indicate a lack of bureaucratic professionalism and have a negative impact on the state's administrative and security capacity, financial resources and its legitimacy (Abed & Gupta, 2002; DeRouen & Sobek, 2004; Myrdal, 1968; Seligson, 2002; Tanzi & Davoodi, 1997); used by FI and ISW
	Data Source	Worldwide Governance Indicators
	Annual Availability	Yes
	Transformation	No
	Missing Data (%)	0
	Variable Label	CORRUPTION
Regulatory Quality score	*Description of Variable*	Captures "perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (Kaufmann et al., 2009, p.6)
	Rationale for Inclusion	Use recommended by USAID (2005); used by FI and ISW
	Data Source	Worldwide Governance Indicators
	Annual Availability	Yes
	Transformation	No
	Missing Data (%)	0
	Variable Label	REGQUAL

TABLE A2: SCI Ranking and Classification Results

Rank	State	SCI Score	SCI Classification	FSI Classification
1	Iceland	3.87364	STRONG	STRONG
2	Luxembourg	3.76029	STRONG	STRONG
3	New Zealand	3.71443	STRONG	STRONG
4	Finland	3.66095	STRONG	STRONG
5	Canada	3.55224	STRONG	STRONG
6	Singapore	3.54123	STRONG	STRONG
7	Sweden	3.35745	STRONG	STRONG
8	Norway	3.35217	STRONG	STRONG
9	Denmark	3.33336	STRONG	STRONG
10	Netherlands	3.25546	STRONG	STRONG
11	Austria	3.16647	STRONG	STRONG
12	Australia	3.13341	STRONG	STRONG
13	Germany	3.13225	STRONG	STRONG
14	Switzerland	3.12091	STRONG	STRONG
15	Ireland	3.07395	STRONG	STRONG
16	Malta	2.88067	STRONG	STRONG
17	Japan	2.85156	STRONG	STRONG
18	Barbados	2.81688	STRONG	STRONG
19	United Kingdom	2.77979	STRONG	STRONG
20	Belgium	2.73225	STRONG	STRONG
21	Cyprus	2.50643	STRONG	WEAK
22	Chile	2.49529	STRONG	STRONG
23	France	2.31587	STRONG	STRONG
24	Brunei Darussalam	2.27487	STRONG	WEAK
25	Slovenia	2.26519	STRONG	STRONG
26	Portugal	222275	STRONG	STRONG
27	Czech Republic	2.17145	STRONG	STRONG
28	Uruguay	2.07310	STRONG	STRONG
29	United States of America	2.05511	STRONG	STRONG
30	Estonia	2.03284	STRONG	STRONG
31	Greece	2.01599	STRONG	STRONG
32	Spain	1.91701	STRONG	STRONG
33	Slovakia	1.89183	STRONG	STRONG
34	Italy	1.87509	STRONG	STRONG
35	Hungary	1.79105	STRONG	STRONG
36	Costa Rica	1.79054	STRONG	STRONG
37	Lithuania	1.75933	STRONG	STRONG
38	United Arab Emirates	1.68415	STRONG	STRONG
39	Bahamas, The	1.66677	STRONG	WEAK
40	Oman	1.61574	STRONG	STRONG
41	Republic of Korea	1.57628	STRONG	STRONG
42	Mauritius	1.57356	STRONG	STRONG
43	Poland	1.55076	STRONG	STRONG
44	Latvia	1.54814	STRONG	STRONG
45	Qatar	1.53302	STRONG	STRONG

Rank	State	SCI Score	SCI Classification	FSI Classification
46	Samoa	1.42819	WEAK	WEAK
47	Grenada	1.39882	STRONG	WEAK
48	Seychelles	1.31652	WEAK	WEAK
49	Malaysia	1.29228	WEAK	WEAK
50	Trinidad & Tobago	1.26022	WEAK	WEAK
51	Panama	1.24334	WEAK	STRONG
52	Croatia	1.16609	WEAK	WEAK
53	Bahrain	1,05876	WEAK	STRONG
54	Kuwait	.95641	WEAK	WEAK
55	Bulgaria	.94584	WEAK	WEAK
56	Botswana	.92351	WEAK	WEAK
57	Cape Verde	.79745	WEAK	WEAK
58	Tunisia	.75238	WEAK	WEAK
59	Namibia	.74831	WEAK	WEAK
60	Jamaica	.73738	WEAK	WEAK
61	Romania	.63738	WEAK	WEAK
62	Moldova	.56739	WEAK	WEAK
63	Mongolia	.56180	WEAK	STRONG
64	Armenia	.49206	WEAK	WEAK
65	Belize	.48862	WEAK	WEAK
66	Jordan	.47395	WEAK	WEAK
67	Mexico	.41410	WEAK	WEAK
68	El Salvador	.36022	WEAK	WEAK
69	Argentina	.34808	WEAK	STRONG
70	Israel	.27208	WEAK	WEAK
71	Suriname	.20447	WEAK	WEAK
72	Kazakhstan	.19219	WEAK	WEAK
73	Bhutan	.17705	WEAK	WEAK
74	Albania	.17078	WEAK	WEAK
75	Libya	.16539	WEAK	WEAK
76	Fiji	.10067	WEAK	WEAK
77	Macedonia, FYR	.04434	WEAK	WEAK
78	Ukraine	.00881	WEAK	WEAK
79	Brazil	.00252	WEAK	WEAK
80	Vietnam	-.00174	WEAK	WEAK
81	China	-.03402	WEAK	WEAK
82	Peru	-.13782	WEAK	WEAK
83	Ghana	-.15122	WEAK	WEAK
84	Benin	-.15730	WEAK	WEAK
85	South Africa	-.18098	WEAK	WEAK
86	Dominican Republic	-.18927	WEAK	WEAK
87	Nicaragua	-.19991	WEAK	WEAK
89	Georgia	-.22863	WEAK	WEAK
90	Cuba	-.23561	WEAK	WEAK
91	Guyana	-.30365	WEAK	WEAK
92	Madagascar	-.32824	WEAK	WEAK
93	Egypt	-.34635	WEAK	WEAK

Rank	State	SCI Score	SCI Classification	FSI Classification
94	Moldova	-.34977	WEAK	WEAK
95	Saudi Arabia	-.36559	WEAK	WEAK
96	Serbia	-.36641	WEAK	WEAK
97	Morocco	-.37862	WEAK	WEAK
98	Turkey	-.39801	WEAK	WEAK
99	Gabon	-.41233	WEAK	WEAK
100	Bosnia & Herzegovina	-.42109	WEAK	WEAK
101	Solomon Islands	-.47681	WEAK	WEAK
102	Malawi	-.57480	WEAK	WEAK
102	Guatemala	-.60731	WEAK	WEAK
103	Honduras	-.64232	WEAK	WEAK
104	Mali	-.67552	WEAK	WEAK
105	Paraguay	-.70666	WEAK	WEAK
106	Mozambique	-.71434	WEAK	WEAK
107	Burkina Faso	-.76675	WEAK	WEAK
108	Tanzania	-.80227	WEAK	WEAK
109	Gambia, The	-.80759	WEAK	WEAK
110	Belarus	-.81617	WEAK	WEAK
111	Rwanda	-.83099	WEAK	WEAK
112	Zambia	-.85457	WEAK	WEAK
113	Thailand	-.86266	WEAK	WEAK
114	Swaziland	-.86860	WEAK	WEAK
115	Lesotho	-.90447	WEAK	WEAK
116	Senegal	-90515	WEAK	WEAK
117	Algeria	-.97071	WEAK	WEAK
118	Mauretania	-.97474	WEAK	WEAK
119	Syria	-.97809	WEAK	WEAK
120	Laos	-1.03393	WEAK	WEAK
121	Cameroon	-1.05318	WEAK	WEAK
122	Djibouti	-1.05787	WEAK	WEAK
123	Indonesia	-1.08592	WEAK	WEAK
124	Turkmenistan	-1.10523	WEAK	WEAK
125	Russia	-1.11547	WEAK	WEAK
126	Azerbaijan	-1.15287	WEAK	WEAK
127	Colombia	-1.16603	WEAK	WEAK
128	Guinea	-1.21744	WEAK	WEAK
129	Kyrgyz Republic	-1.25438	WEAK	WEAK
130	Cambodia	-1.27124	WEAK	WEAK
131	India	-1.31623	WEAK	WEAK
132	Papua New Guinea	-1.34377	WEAK	WEAK
133	Ecuador	-1.37337	WEAK	WEAK
134	Equatorial Guinea	-1.45613	WEAK	WEAK
135	Philippines	-1.49069	WEAK	WEAK
136	Sierra Leone	-1.49813	WEAK	FAILED
137	Sri Lanka	-1.51390	FAILED	FAILED
138	Uzbekistan	-1.58630	WEAK	FAILED
139	Togo	-1.58963	WEAK	WEAK

Rank	State	SCI Score	SCI Classification	FSI Classification
140	Uganda	-1.62690	WEAK	FAILED
141	Niger	-1.65704	WEAK	FAILED
142	Kenya	-1.69463	WEAK	FAILED
143	Tajikistan	-1.69837	WEAK	WEAK
144	Bolivia	-1.70036	FAILED	WEAK
145	People's Republic of Korea	-1.71587	WEAK	FAILED
146	Angola	-1.74616	WEAK	WEAK
147	Comoros	-1.89898	FAILED	WEAK
148	Lebanon	-1.90046	FAILED	FAILED
149	Iran	-1.92276	FAILED	WEAK
150	Republic of Congo	-2.00144	WEAK	FAILED
151	Yemen	-2.06081	FAILED	FAILED
152	Venezuela	-2.08649	FAILED	WEAK
153	Bangladesh	-2.26293	FAILED	FAILED
154	Nepal	-2.34926	FAILED	FAILED
155	Haiti	-2.37263	FAILED	FAILED
156	Liberia	-2.51677	FAILED	FAILED
157	Burundi	-2.61436	FAILED	FAILED
158	Ethiopia	-2.84578	FAILED	FAILED
159	Pakistan	-2.97711	FAILED	FAILED
160	Nigeria	-2.98214	FAILED	FAILED
161	Eritrea	-2.98292	FAILED	FAILED
162	Myanmar	-3.04712	FAILED	FAILED
163	Central African Republic	-3.23210	FAILED	FAILED
164	Ivory Coast	-3.25115	FAILED	FAILED
165	Chad	-3.27349	FAILED	FAILED
166	Guinea-Bissau	-3.34867	FAILED	FAILED
167	Zimbabwe	-3.45431	FAILED	FAILED
168	Iraq	-3.66367	FAILED	FAILED
169	Sudan	-3.70959	FAILED	FAILED
170	Afghanistan	-3.96258	FAILED	FAILED
171	Democratic Republic of Congo	-4.23441	FAILED	FAILED
172	Somalia	-5.59887	FAILED	FAILED

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